CHICAGO
Electric® Generators

2200 RATED WATTS/2400 MAX WATTS

PORTABLE GENERATOR

Model 95189

OPERATING INSTRUCTIONS

Visit our website at: http://www.harborfreight.com

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

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For technical questions or replacement parts, please call 1-800-444-3353.

Revised Manual 10c; 10d

SPECIFICATIONS

VAC Electrical Specifications	115 Volts @ 20 Amps Current Output 60 Hz 2200 Rated Watts / 2400 Max Watts Two 120V, Household Receptacles with a 20 Amp circuit breaker
VDC Electrical Specifications	12 VDC @ 10 Amps Current Output
Voltmeter Equipped	0-150 Volts / 50 Volt Increments
Display Lights	Red (Run)
Generator Type	Brush / Revolving Field / Self Exciting Two Pole / Single Phase
Gasoline Engine	5.5 HP / Unleaded Gasoline Powered Recoil Start / 4-Cycle / OHV Air Cooled 163 CC Displacement / 3600 RPM 0.63 Quart (0.6 Liter) Oil Capacity CARB and EPA Certified
Fuel Tank Capacity	3.96 Gallons (15 Liters)
Estimated Run Time	11.8 Continuous Running Hours at Half Loading
Weight	91.5 lbs.

This product requires oil and fuel to be added before starting. Attempting to start the engine without oil WILL ruin the engine and void the warranty.

The Emission Control System for this generator's engine is warranted for standards set by the U.S. Environmental Protection Agency and by the California Air Resources Board (also known as CARB). For warranty information, refer to the back two pages of this manual.

SAVE THIS MANUAL

You will need this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures, parts list and assembly diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep this manual and invoice in a safe and dry place for future reference.

UNPACKING

When unpacking, check to make sure all the parts shown on the Parts LIsts on pages 18 and 20 are included. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of the manual as soon as possible.

GENERAL SAFETY RULES

⚠WARNING!

READ AND UNDERSTAND ALL INSTRUCTIONS
Failure to follow all instructions listed below may result in electric shock, fire, and/or serious injury.
SAVE THESE INSTRUCTIONS

WORK AREA

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.

2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Generators create sparks which may ignite the dust or fumes.

3. **Keep bystanders, children, and visitors away while operating a power tool.** Provide barriers or shields as needed.

ELECTRICAL SAFETY

4. **Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.

5. **Double insulated tools are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.** Double insulation ⧈ eliminates the need for the three wire grounded power cord and grounded power supply system.

6. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is grounded.

7. **Do not expose power tools to rain or wet conditions.** Water entering a generator will increase the risk of electric shock.

8. **Do not abuse the Power Cords. Never use a Power Cord to carry tools or pull the Plug from the outlet. Keep Power Cords away from heat, oil, sharp edges, or moving parts. Replace damaged Power Cords immediately.** Damaged Power Cords increase the risk of electric Shock.

9. **When operating a power tool outside, use an outdoor extension coard marked "W-A" or "W".** These extension cords are rated for outdoor use, and reduce the risk of electric shock.

PERSONAL SAFETY

10. **Stay alert. Watch what you are doing, and use common sense when operating a power tool. Do not use a power tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.

11. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.

12. **Avoid accidental starting. Make sure the Power Switch is in its "OFF" position, and disconnect the Spark Plug Wire when not in use.**

13. **Remove adjusting keys or wrenches before turning the Generator on.** A wrench or a key that is left attached to a rotating part of the machine may result in personal injury.

14. **Do not overreach. Keep proper footing and balance at all times.**

15. **Use safety equipment. Always wear eye protection.** Always wear ANSI approved safety impact goggles when using this product. ANSI approved hearing protection must also be used.

16. **Do not force the generator. Use the correct generator for you application.** The correct generator will do the job better and safer at the rate for whick it is designed.

17. **Do not use the Generator if the Power Switch does not turn it on or off.** Any generator that cannot be controlled with the Power Switch is dangerous and must be replaced.

GENERATOR USE AND CARE

18. **Make sure the Power Switch is in its "OFF" position and disconnect the spark plug wire before making any adjustments, changing accessories, or storing**

the generator. Such preventive safety measures reduce the risk of starting the generator accidentally.

19. **Store idle generators out of reach of children and other untrained persons.** Generators are dangerous in the hands of untrained users.

20. **Maintain generators with care.** Do not use a damaged generator. Tag damaged generators **"Do not use"** until repaired.

21. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the generator's operation. If damaged, have the generator serviced before using.** Many accidents are caused by poorly maintained generators.

22. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may become hazardous when used on another generator.

23. **CAUTION: This generator is not intended to power sensitive electronic equipment* without the addition of an appropriate power line conditioner and surge protector (both not included).** Sensitive electronic equipment should be operated on approved inverter type generators or pure sine wave generators.

    When the plugged in product operates abnormally or unusually slow, immediately stop using the generator as a power source. Always read and adhere to the instruction manual of the product to be powered, to make sure that it can be safely and efficiently powered by a portable generator.

    Note: When using a generator to provide home standby electricity, a transfer switch (sold separately) is needed to prevent back feeding power into the utility line.

    Connections for standby power to a building electrical system must be made by a qualified electrician. The connection must isolate the generator power from utility power, and must comply with all applicable laws and electrical codes.

    WARNING: Improper connections to a building electrical system can allow electrical current from the generator to backfeed into the utility lines. Such backfeed may electrocute utility company workers or others who contact the lines during a power outage, and the generator may explode, burn, or cause fires when utility power is restored. Consult the utility company or a qualified electrician.

    ***Sensitive electronic equipment includes, but is not limited to, audio/video equipment, some television sets, computers, and printers.**

AC Applications

24. Before connecting an appliance or power cord to the generator: Make sure that it is in good working order. Faulty appliances or power cords can create a potential for electrical shock.

25. If an appliance begins to operate abnormally, becomes sluggish or stops suddenly, turn it off immediately. Disconnect the appliance, and determine whether the problem is the appliance, or if the rated load capacity of the generator has been exceeded.

26. Make sure that the electrical rating of the tool or appliance does not exceed that of the generator. Never exceed the maximum power rating of the generator. Power levels between rated and maximum may be used for no more than 30 minutes.

27. Substantial overloading will open the circuit breaker. Exceeding the time limit for maximum power operation or slightly overloading the generator may not switch the circuit breaker or circuit protector OFF, but will shorten the service life of the generator.

28. Always keep fuel tank capped, even when empty, to prevent rainwater, dirt and debris from getting into the fuel tank.

29. Maintain labels and nameplates on the Generator and Engine. These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

30. Generator service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury.

31. When servicing a generator, use only identical replacement parts. Follow instructions in the “Inspection, Maintenance, and Cleaning” section of this manual. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.

SPECIFIC PRODUCT WARNINGS AND PRECAUTIONS

HEART PACEMAKER PRECAUTION

WARNING! People with pacemakers should consult their physician(s) before using this product. Electromagnetic fields in close proximity to a heart pacemaker could cause interference to or failure of the pacemaker.

INSTALLATION PRECAUTIONS

1. **Ensure installation meets all applicable safety, and local and national electrical codes.** Have installation performed by a qualified, licensed electrician and building contractor.

2. **All electrical work, including the earth-ground connection, should be completed by a licensed electrician.**

3. **Any separate fuel storage Generator supply facility must be built or installed in full compliance with all relevant local, state, and federal regulations.**

4. If the generator is installed indoors, exhaust fumes must be piped out of the building using leak-free, heat-resistant piping. **Use the Generator only in a well ventilated outdoor areas. Carbon monoxide fumes are a colorless, odorless gas that, if inhaled, can cause serious injury or death.** Pipes and silencer should not use any flammable materials, nor should they be installed near the same. Generator exhaust fumes must within legal limits.

5. **If the generator is installed outdoors, it must be weatherproofed and should be sound-proofed.** It should not be run outdoors without protection to the Generator and wiring conduit.

6. **Never lift the Generator using the engine or alternator lifting lugs.** Connect lifiting equipment to the Frame of the Generator.

7. **Before lifting the Generator, ensure the lift rigging and supporting structure are in good condition, and are rated to lift such a load.**

8. **Keep all personnel away from the suspended generator while relocating.**

9. **The supporting floor/ground surface should be level, and strong enough to safely hold the weight of the Generator.** If the floor/ground surface is not level, strong cross members should be placed under the full length of the Generator Frame at its low side.

10. **For trailer installation, the Generator should be mounted on the center point of the trailer, over the wheels.**

11. **Install sound and weather proofing only when it is not raining or snowing to avoid trapping moisture with the Generator's area.**

FIRE AND EXPLOSION PRECAUTIONS

1. **Gasoline fuel and fumes are flammable, and potentially explosive.** Use proper fuel storage and handling procedures. Always have multiple ABC class fire extinguishers nearby.
2. **Keep the Generator and surrounding areas clean at all times.**
3. **When spills of fuel or oil occur, they must be cleaned up immediately.** Dispose of fluids and cleaning materials as per any local, state, or federal codes and regulations. Store oil rags in a covered metal container.
4. **Never store fuel or other flammable materials near the Generator.**
5. **Do not smoke, or allow sparks, flames, or other sources of ignition around the Generator.**
6. **Keep grounded conductive objects, such as tools, away from exposed, live electrical parts and connections to avoid sparking or arcing.** These events could ignite fumes or vapors.
7. **Do not refill the Fuel Tank while the Engine is running or while the Engine is still hot.** Do not operate the Generator with known leaks in the fuel system.
8. **Excessive buildup of unburned fuel gases in the exhaust system can create a potentially explosive condition.** This buildup can occur after repeated failed start attempts, valve testing, or hot engine shutdown. If this occurs, open exhaust system drain plugs, if equipped, and allow the gases to dissipate before attempting to restart the Generator.
9. **Use only Engine manufacturer recommended fuel and oil.**

MECHANICAL PRECAUTIONS

1. **ALWAYS make sure the Power Switch is in its "OFF" position.** Disconnect the spark plug wire, and allow the Engine to completely cool before carrying our maintenance.

2. **Check for damaged parts.** Before using the Generator, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts, any broken parts or mounting fitures, and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician.

3. **The Generator is designed with guards for protection from moving parts.** In any case, care must still be taken to protect personnel and equipment from other mechanical hazards when working around the generator.

4. **Do not operate the Generator with safety guards removed.** While the Generator is running, do not attempt to reach around the safety guards for maintenance or any other reason.

5. **Keep hands, arms, long hair, loose clothing, and jewelry away from oving parts.** Be aware that when engine parts are moving fast they cannot be seen clearly.

6. **Keep access doors on enclosures closed and locked when access is not required.**

7. **Whan working on or around the Generator always wear protective clothing including ANSI approved safety gloves, safety eye goggles, and safety hat.**

8. **Do not alter or adjust any part of the Generator that is assembled and supplied by the manufacturer.**

9. **Always follow and complete scheduled Engine and Generator maintenance.**

CHEMICAL PRECAUTIONS

1. **Avoid contact with hot fuel, oil, exhaust fumes, and solid surfaces.**

2. **Avoid body contact with fuels, oils, and lubricants used in the Generator and Engine.** If swallowed, seek medical treatment immediately. Do not induce vomiting if fuel is swallowed. For skin contact, immediately wash with soap and water. For eye contact, immediately flush eyes with clean water.

NOISE PRECAUTION

Prolonged exposure to noise levels above 85 dBA is hazardous to hearing. Always wear ANSI approved ear protection when operating or working around the Generator when it is running.

ELECTRICAL PRECAUTIONS

1. **All connections and conduits from the Generator to the load must only be installed by trained and licensed electricians, and in compliance with all relevant local, state, and federal electrical codes and standards, and other regulations where applicable.**

2. **The Generator must be earth-grounded in accordance with all relevant electrical codes and standards before operation.**

3. **If an extension cord (not included) is used, make sure to use only UL listed cords having the correct gauge and length. (See TABLE A)**

REQUIRED MINIMUM EXTENSION CORD GAUGE - 120 VOLT					
NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH				
	0-25 Feet	25-50 Feet	50-100 Feet	100-150 Feet	150-200 Feet
0 – 5	16	16	16	12	12
5.1 – 8	16	16	14	10	-
8.1 – 12	14	14	12	-	-
12.1 – 15	12	12	10	-	-
15.1 – 20	10	10	10	-	-

TABLE A

4. **Do not attempt to connect or disconnect load connections while standing in water, or on wet or soggy ground.**

5. **Do not touch electrically energized parts of the Generator and interconnecting cables or conductors with any part of the body, or with any non-insulated conductive object.**

6. **Connect the Generator only to a load or electrical system (115 volt) that is compatible with the electrical characteristics and rated capacities of the Generator.**

7. **Before servicing equipment powered by the Generator, disconnect the equipment from its power input.**

8. **Keep all electrical equipment clean and dry.** Replace any wiring where the insulation is cracked, cut, abraded, or otherwise degraded. Replace terminals that are worn, discolored, or corroded. Keep terminals clean and tight.

9. **Insulate all connections and disconnected wires.**

10. **Guard against electric shock.** Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures.

11. **Use only Class BC or Class ABC fire extinguishers on electrical fires.**

INSTALLATION

1. **NOTE**: Prior to powering tools and equipment, make sure the Generator's rated voltage, wattage, and amperage capacity (120V - 20 Amp's) is adequate to supply all electrical loads that the unit will power. If powering exceeds the Generator's capacity, it may be necessary to group one or more of the tools and/or equipment for connection to a separate Generator.

2. Electrical and other permits may be required for the installation of emergency or portable power systems. Investigate the local building and electrical codes before installing this unit. Installation must be completed by licensed contractors.

3. **WARNING**: The Generator weighs 91.5 pounds. Use care and the proper lifting or hoisting equipment when moving it to the installation location. Always connect hoist lines to the Frame ($41B_1$) of the Generator.

GENERAL LOCATIONS

1. It is recommended to locate the Generator (outdoors only) where cooling air is readily available.

2. Install the Generator so that the air inlets and outlets are not blocked by obstructions such as bushes, trees, or snow drifts. Locating it in the path of heavy winds or snowdrifts may require the placement of a barrier for protection. The air inlet, in normal weather conditions, should face the prevailing wind direction.

3. Install the Generator on a concrete slab or other area where rain drainage or flood waters can not reach it.

4. Generator placement should allow four feet of access to all sides for maintenance.

5. Place the Generator as close as possible to the electrical tools and equipment being powered to reduce the length of extension cords.

6. If the Generator is located indoors the Engine exhaust must be ventilated to the outdoors using leakproof, heat resistant, flexible, metal, flex tubing.

GENERATOR SUPPORT AND MOUNTING

Mount the Generator on a concrete slab capable of supporting the weight of the Generator. The slab must extend on all sides beyond the Frame (41B) by a least one foot. Contact a cement contractor for slab specifications if necessary. Attach the Frame to the concrete slab using 3/8” diameter expansion anchor bolts (not supplied).

GROUNDING THE GENERATOR

Note: It is recommended that only a trained and licensed electrician perform this procedure.

Connect a #6 AWG grounding wire (not included) from the Grounding Connector (8) on the Generator to a grounding rod (not included) that has been driven at least **24 inches** deep into the earth. The grounding rod must be an earth-driven copper or brass rod (electrode) which can adequately ground the Generator. **(See Figure B.)**

THIS UNIT CAN POWER THE FOLLOWING ITEMS

ITEM	RUNNING WATTS	START-UP WATTS
1/3 HP Air Compressor	720	1000
Belt Sander	1200	2400
Drum Mixer	700	1200
Motor 1/2 HP	875	2300
Reciprocating Saw	750	1400
Microwave Oven	1000	1200
Refrigerator/Freezer	700	2200
Sump Pump 1/2 HP	1050	2150
Vacuum Cleaner	1100	2200
Well Pump 1/2 HP	1000	2100

NOTE: Wattages listed above are estimates for that type of equipment only. Check nameplate wattages on all loads before connecting to Generator.

OPERATING INSTRUCTIONS

NOTE: For additional references to the parts listed in the following pages, refer to the Assembly Diagrams on pages 21 and 24.

Pre-Start Checks:

1. Check to make sure the Engine's Power Switch (2) is in its **"OFF"** position. **(See Figure B, next page.)**

2. **IMPORTANT! Prior to first using the Generator, the Engine MUST be filled with approximately 3/4 (0.63) quart of a high quality SAE 10W-30 grade engine oil.** To do so, unscrew and remove the Oil Dipstick (54C) located at the bottom of the Engine Crankcase. Pour engine oil into the oil Fill hole until the level of oil is even with the bottom edge of the oil fill hole (if you cannot see the oil through the oil fill hole, then the oil is too low and more oil must be added). Then, screw the Dipstick back into the Oil Fill Hole. **(See Figure C, next page.)**

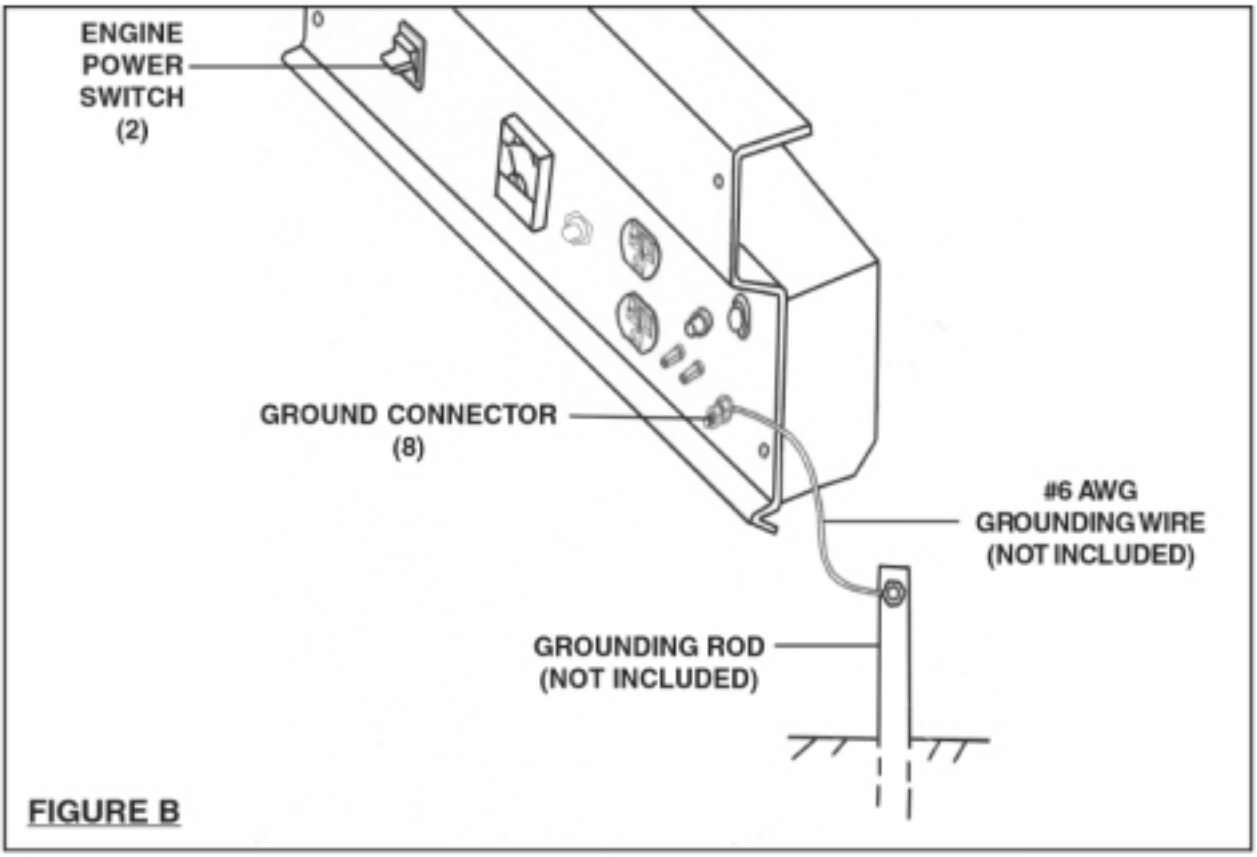


FIGURE B

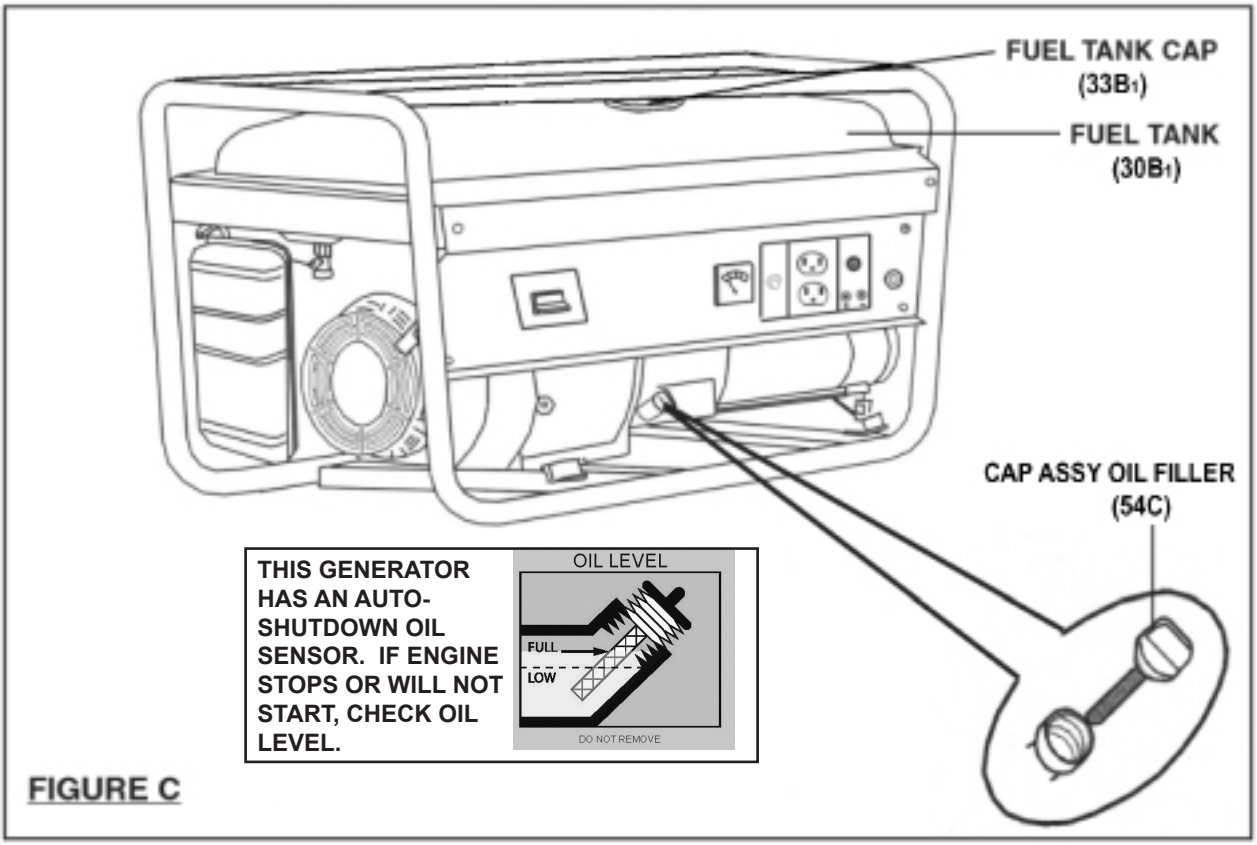


FIGURE C

3. Before the first use, remove the Fuel Tank Cap ($33B_1$) and fill the Fuel Tank ($30B_1$) with **unleaded** gasoline. Then, replace the Fuel Tank Cap. If necessary, refill the Fuel Tank with unleaded gasoline. **(See Figure C.)**

To Start The Engine:

1. Make sure the electrical powered tools/equipment that will be used is not plugged in to the Generator.
2. Turn the 115 volt AC Circuit Breaker (5) to its "**ON**" position. **(See Figure D.)**
3. Open the Fuel Valve (40B). **(See Figure E.)**
4. Move the Choke Lever (116C) to the CLOSED position to start a cold engine. Leave the Choke Lever (116C) in the open position to restart a warm engine. **(See Figure E.)**

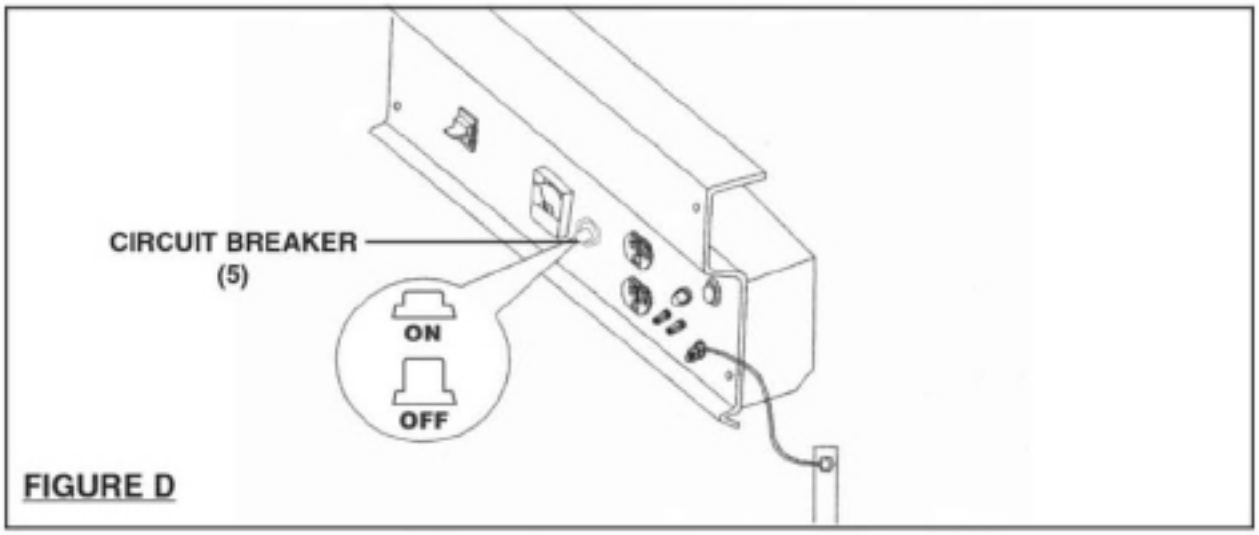


FIGURE D

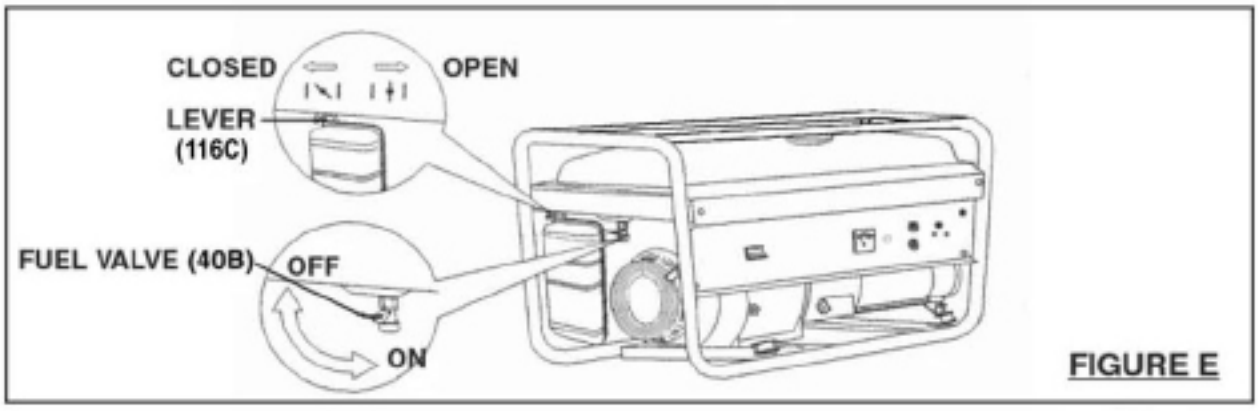


FIGURE E

REV 09a

5. Turn the Engine Power Switch (2) to its “ON” position. **(See Figure F.)**

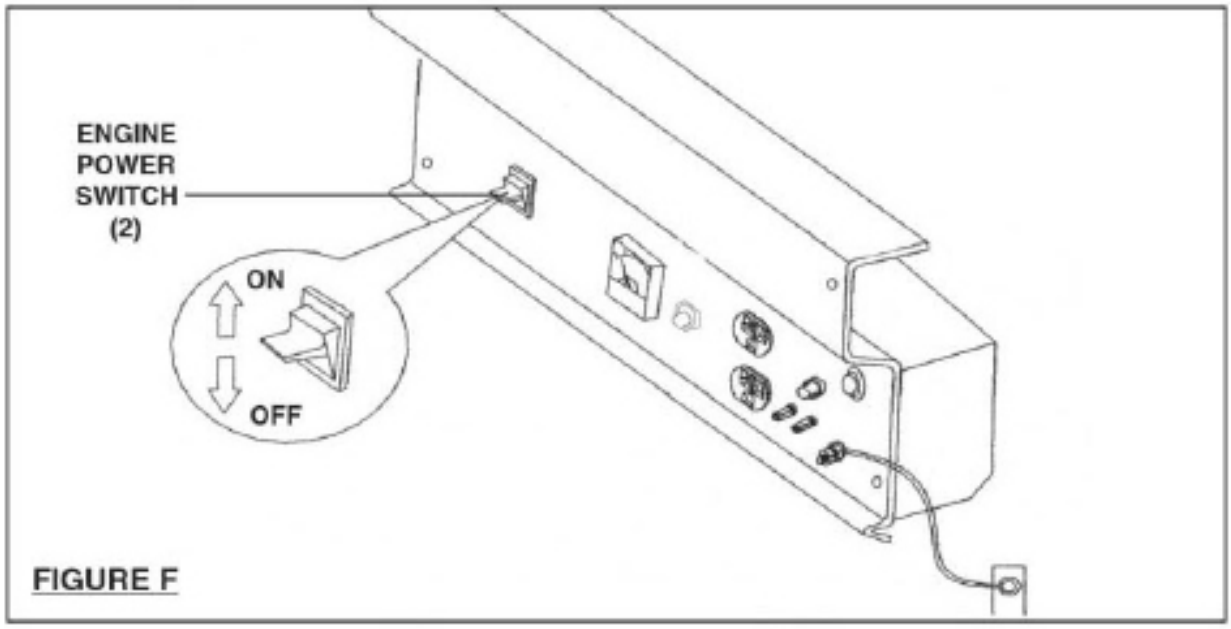


FIGURE F

6. Hold the Start Handle (114C) loosely and pull it slowing several times to allow the gasoline to flow into the Engine’s carburetor. Then hold the Start Handle firmly and pull the rope hard and fast. Pull the rope all the way out, using two hands if necessary. If necessary pull the tope several times until the Engine starts. **(See Figure G.)**

7. Allow the Engine to run for several seconds. Then, open the Choke Lever (116C) all the way. **(See Figure E.)**

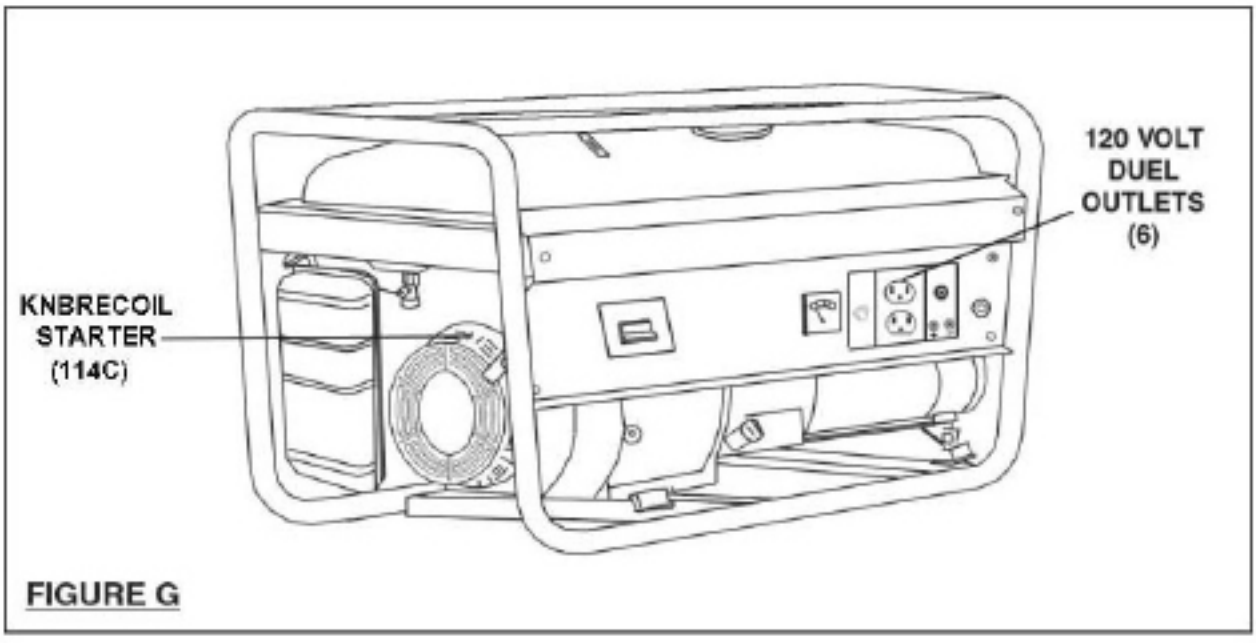


FIGURE G

Powering 120 Volt AC Tools and Equipment:

1. Prior to powering tools and equipment, make sure the Generator's rated voltage, and amperage capacity **(115 VAC / 20 AMPs)** is adequate to supply all electrical loads that the unit will power. If powering exceeds the Generator's capacity, it may be necessary to group one or more of the tools and/or equipment for connection to a separate generator.

2. Once the Generator is running, simply connect the Power Cords of 115 volt AC powered tools and equipment into the 115 volt AC Duel Outlets (6). **(See Figure G.)**

3. **NOTE**: The Generator features an AC Non-Fuse Circuit Breaker (5) to protect the AC circuit in case of an overload. Should an overload occur the Breaker will "trip" to its **"OFF"** position, causing the Generator to automatically shut down. In this case, refer to Step #1 above in this section. Then, reset the circuitry system by turning the Circuit Breaker to its **"ON"** position. Restart the Generator and continue powering the remaining tools and equipment. **(See Figure D.)**

4. When finished using the Generator, turn the Engine Power Switch (2) to its **"OFF"** position. Turn the Fuel Valve (40B) to its **"OFF"** position. Then, disconnect all electrical powered tools and equipment from the Generator's 115 volt AC Duel Outlets (6). **(See Figure E, F & G.)**

5. After the Engine and Generator have completely cooled, store the Generator in a safe, clean, dry location (if not already installed in one).

Powering 12 Volt DC Tools and Equipment:

1. Prior to powering a tool or equipment, make sure the Generator's rated voltage, and amperage capacity **(12 VDC / 10 AMPs)** is adequate to supply all electrical loads that the unit will power. If powering exceeds the Generator's capacity, it may be necessary to group one or more of the tools and/or equipment for connection to a separate generator.

2. Connect the Power Cord of a 12 VDC powered tool or equipment to the DC Terminals (7). **NOTE:** Make sure to connect the **positive (+)** lead of the Power Cord to the **positive (+)** Terminal on the Generator, and connect the **negative (-)** lead of the Power Cord to the **Negative (-)** Terminal on the Generator. **(See Figure H, next page.)**

3. If using only a 12 volt DC tool or equipment, turn the 120 volt AC Circuit Breaker (5) to its **"OFF"** position. **(See Figure D.)**

4. Start and run the Engine as previously discussed in this manual.

5. When finished using the Generator, turn the Engine Power Switch (2) to its **"OFF"** position. Turn the Fuel Valve (40B) to its **"OFF"** position. Then, disconnect the electrical powered tool or equipment from the Generator's DC Terminals (7). **(See Figure H.)**

6. After the Engine and Generator have completely cooled, store the Generator in a safe, clean, dry location (if not already installed in one).

7. **NOTE:** The Generator features a 10 AMP DC Fuse (9) to protect the DC circuit in case of an overload. Should an overload occur the Fuse will burn out, causing the Genrator to automatically shut down. In this case, refer to Step #1 in this section. Then, reset the circuitry system by replacing the burnet Fuse with a new 10 AMP DC Fuse. Restart the Generator and continue powering the remaining tool or equipment. **(See Figure H.)**

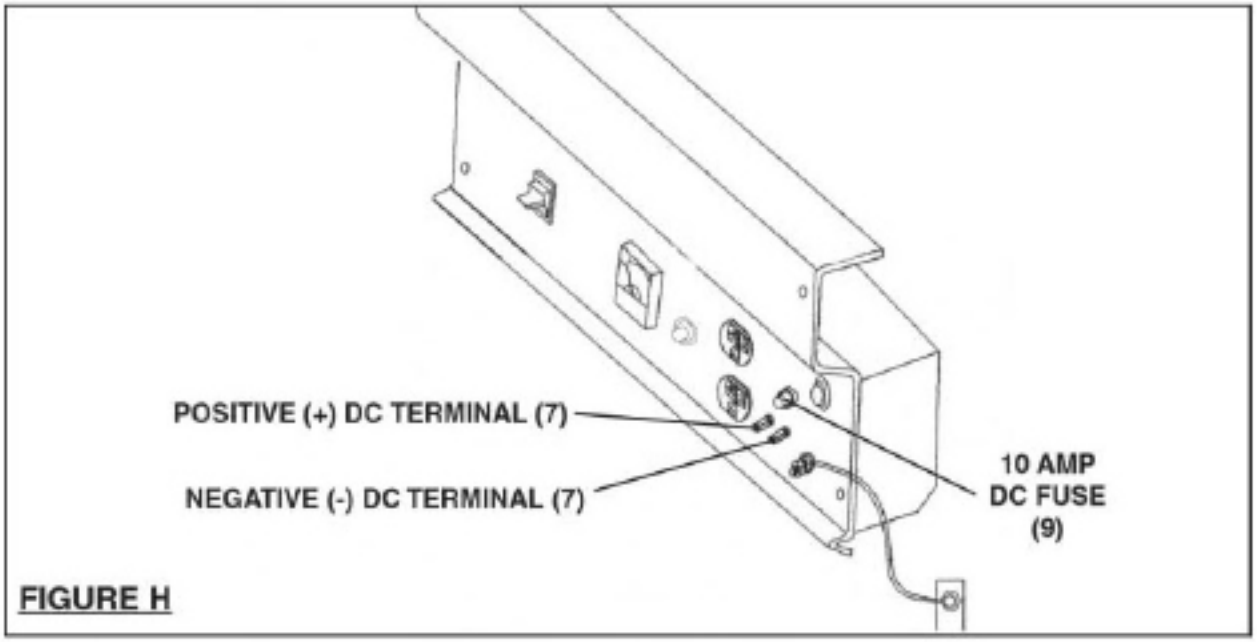


FIGURE H

INSPECTION, MAINTENANCE, AND CLEANING

1. **CAUTION! Always make sure the Engine Power Switch (2) is in its "OFF" position. Disconnect the spark plug wire from the engine and allow sufficient time for the Engine and Generator to completely cool before performing any inspection, maintenance, or cleaning.**

2. **Before each use,** inspect the general condition of the Generator and Engine. Check for loose screws, misalignment or binding of moving parts, cracked or broken parts, loose hose connections, and any other condition that may affect the safe operation of the Generator and Engine. If abnormal noise or vibration occurs, have the problem corrected before further use. **Do not use damaged equipment.**

3. Follow all maintenance procedures as outlined in the **Engine Maintenance Schedule** below at the specified intervals. In addition, observe the following details:

   Before each use: check to make sure the Engine's oil level is adequate. If necessary, fill the Engine's Crankcase until the oil level is even with the Oil Fill Hole.

   Before each use: with a soft brush, sloth, or vacuum, remove all debris from the Generator and Engine. Then, use a premium quality, lightweight machine oil to lubricate all moving parts.

   After the inital 20 hours of use and every 100 hours of use thereafter: drain the old Engine oil and replace with approximately 3/4 (0.63) quart of a high quality SAE 10W-30 grade engine oil.

4. Alway keep fuel tank capped, even when empty, to prevent rainwater, dirt and debris from getting into the fuel tank.

Engine Maintenance Schedule

	Interval* *More frequent maintenance will be necessary in dusty or severe conditions.						Details
	8 hours or daily, before use	50 hours or weekly	100 hours or biweekly	200 hours or monthly	500 hours or every 6 months	1000 hours or yearly	
Clean engine and check bolts & nuts	■	■	■	■	■	■	
Check and refill engine oil	■	■	■	■	■	■	
Change engine oil*			■	■	■	■	*Initial change immediately after 20 hour break-in period
Plug, spark (LD NGK)(14C)		■	■				
Clean and adjust plug, spark (LD NGK)(14C) electrodes				■			
Replace plug, spark (LD NGK)(14C)					■	■	
Clean filter outer (34C)		■	■				
Replace filter outer (34C)				■	■	■	
Clean/replace fuel filter(s)*				■	■		*QUALIFIED TECHNICIAN/ MECHANIC ONLY
Replace fuel lines and filter(s)*						■	*QUALIFIED TECHNICIAN/ MECHANIC ONLY
Remove carbon from head comp, cylinder (1C)*					■	■	*QUALIFIED TECHNICIAN/ MECHANIC ONLY
Check and adjust valve clearance*					■	■	*QUALIFIED TECHNICIAN/ MECHANIC ONLY
Clean and adjust carburetor*					■	■	*QUALIFIED TECHNICIAN/ MECHANIC ONLY
Overhaul engine*						■	*QUALIFIED TECHNICIAN/ MECHANIC ONLY

REV 09a

PARTS LIST

Part	Description	Qty
1	Bolt (M6 x 12) w/Lock Washer	9
2	Engine Power Switch	1
3B	Control Panel	1
4	Voltmeter	1
5	Circuit Breaker	1
6	Outlet	2
7	DC Terminal	2
8	Ground Connector	1
9	DC Fuse	1
10	Pilot Light	1
11	Shock Absorber	4
12	Shock Absorber Foot	4
13	Lock Washer Nut	4
14	Stator Cover	1
15	Alternator Back Cover	1
16	Automatic Voltage Regulator	1
17	Bolt (M5 x 16)	2
18	Rectifier	1
19	Bolt (M5 x 16)	2
20	Cable Sheath	1
21	Bolt (M8 x 224)	1
22	Bolt (M6 x 152)	4

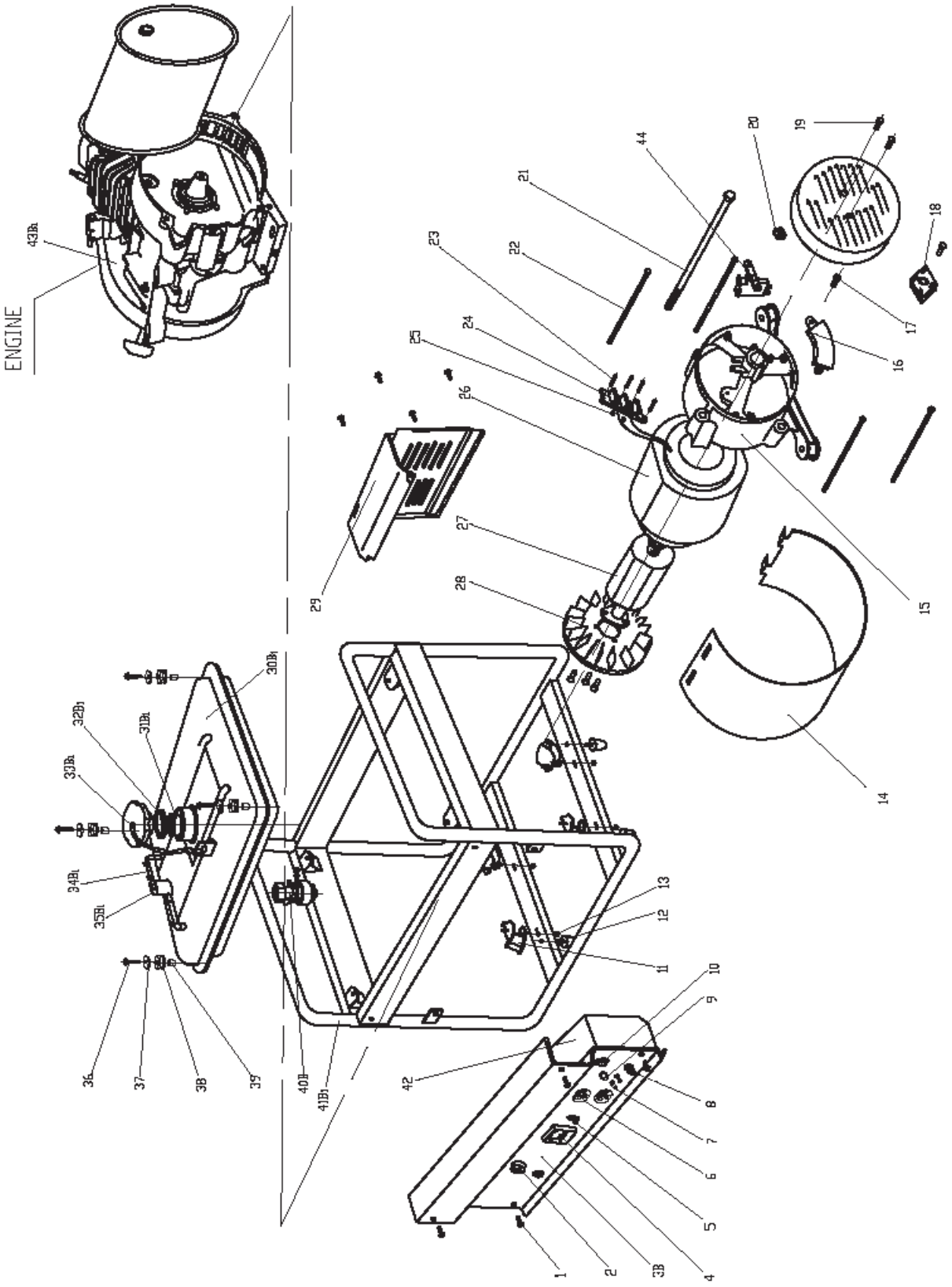
Part	Description	Qty
23	Bolt (M5 x 20)	4
24	Connection Board	1
25	Nut (M5)	4
26	Stator	1
27	Rotor	1
28	Cooling Fan	1
29	Heat Insulation Board	1
$30B_1$	Fuel Tank	1
$31B_1$	Fuel Filter	1
$32B_1$	Seal Ring	1
$33B_1$	Fuel Tank Cap	1
$34B_1$	Overflow Valve Pipe	2
$35B_1$	Overflow Valve	1
36	Lock Washer Bolt (M6 x 30)	4
37	Spacer	4
38	Rub Washer	4
39	Bush	4
40B	Fuel Valve	1
$41B_1$	Frame	1
42	Switch Box Cover	1
$43B_1$	Engine	1
44	Carbon Brush	1

NOTE: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

ASSEMBLY DIAGRAM



PARTS LIST - CONTINUED

Part	Description	Qty
1C	Head Comp. Cylinder	1
2C	Guide, IN. Valve (Oversize)	1
3C	Guide, Valve (Oversize)	1
4C	Clip, Valve Guide	2
5C	Gasket, Cylinder Head	1
6C	Cover Comp Head	1
7C	Packing, Head Cover	1
8C	Tube, Breather	1
9C	Bolt, Flange, 6x12	4
10C	Bolt, Stud, 6x109	2
11C	Bolt, Stud, 8x32	2
12C	Pin, Dowel, 10x16	2
13C	Bolt, Flange, 8x60	4
14C	Plug, Spark (LD NGK)	1
15C	Camshaft Assy	1
16C	Rod Push	2
17C	Arm Valve Rocker	2
18C	Lifter Valve	2
19C	Pivot Rocker Arm	2
20C	Valve IN	1
21C	Valve EX	1
22C	Sorubg Valve	2
23C	Retainer IN. Valve Spring	1
24C	Retainer EX. Valve Spring	1
25C	Ratator Valve	1
26C	Plate Push Rod Guide	1
27C	Bolt Pivot 8MM	2
28C	Nut Pivot Adjusting	2
29C	Gasket Insulator	1
30C	Insulator Carburetor	1
31C	Gasket Carburetor	1
32C	Carburetor Spacer Comp	1
33C	Carburetor Filter Outer	1
34C	Filter Outer	1
35C	Principal Part Air Cleaner	1
36C	Case Comp Air Cleaner	1
$37C_1$	Cover Air Cleaner	1
38C	Stay Air Cleaner	1
39C	Seal Air Cleaner	1
40C	Bolt Winker Serring	4
41C	Nut Flange 6MM	4
42C	Bolt Flange 6x10	2

Part	Description	Qty
43C	Muffler Comp	1
44C	Bolt, Flange	1
45C	Stay, Muffler A	1
46C	Carbon Canister	1
47C	Bolt, Flange	1
48C	Pipe, Exhaust	1
49C	Bolt, Flange	2
50C	Gasket, Exhaust Pipe	1
51C	Nut, Exhaust Pipe	2
52C	Cover Assy Crankcase	1
53C	Packing Case Cover	1
54C	Cap Assy Oil Filler	1
55C	Cap Assy Oil Filler	1
56C	Gasket Oil Filler Cap	2
57C	Oil Seal 25x41.25x6	1
58C	Pin Dowel 8x14	2
59C	Bolt Flange 8x32	6
60C	Bearing Radial Ball 6205	1
61C	Crankshaft Comp	1
62C	Ring Set Piston STD	1
63C	Piston STD	1
64C	Pin Piston	1
65C	Rod Assy Connecting STD	1
66C	Bolt Connection Rod	2
67C	Clipistion Pin 18MM	2
$68C_1$	Cylinder Assy	1
69C	Switch Assy Oil Level	1
70C	Governor Assy	1
71C	Slider Governor	1
72C	Shaft Governor	1
73C	Pin Lock 8MM	1
74C	Bolt Flange 6x20	2
75C	Bolt Drain Plug	2
76C	Washer Thrust 6MM	1
77C	Washer Drain Plug 10.2MM	2
78C	Clip Governor Holder	1
79C	O-Ring 14MM	1
80C	Nut Flange 10MM	1
81C	Washer Plain 6MM	1
82C	Arm Governor	1
83C	Rod Governor	1

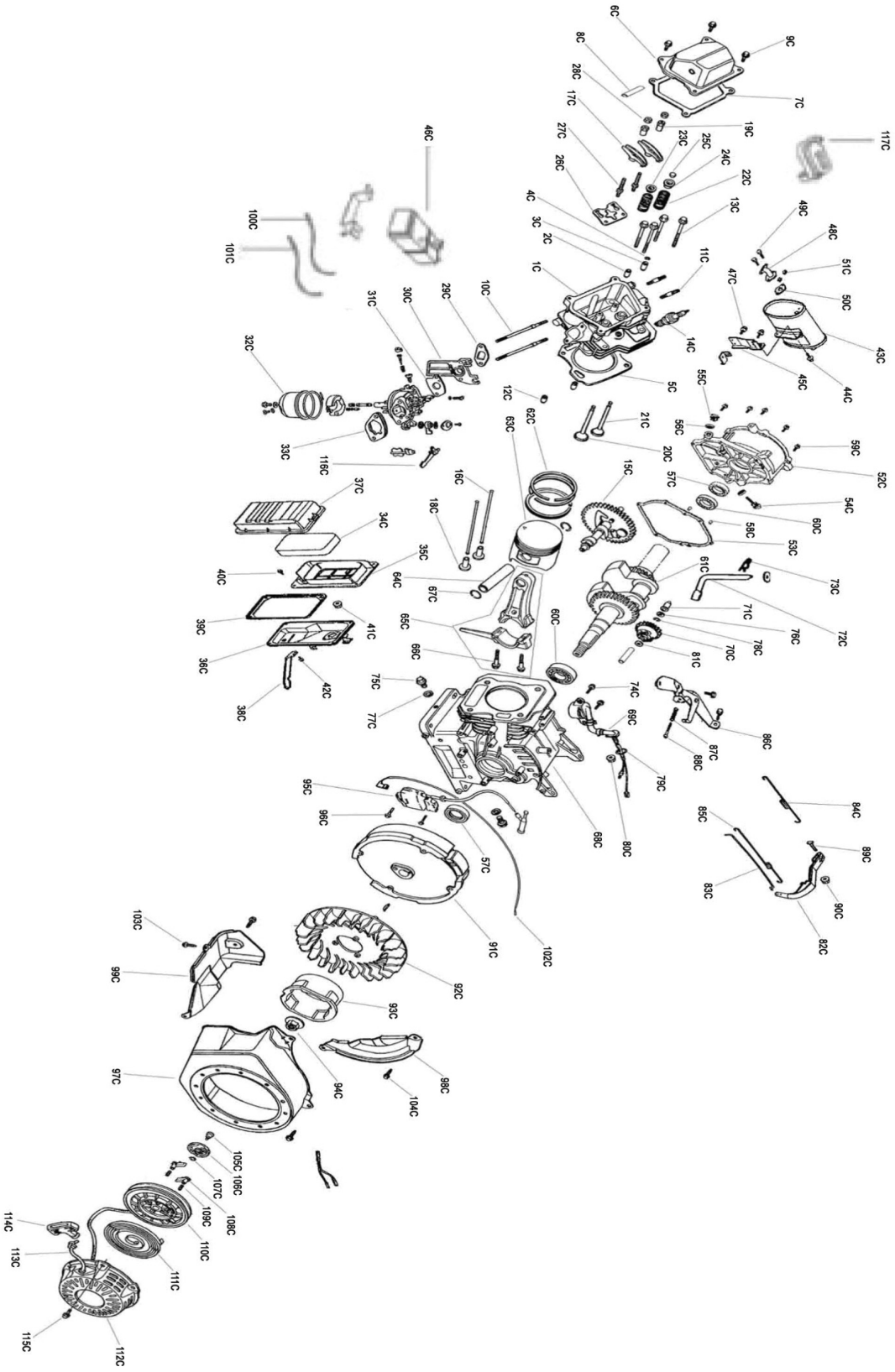
NOTE: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

PARTS LIST - CONTINUED

Part	Description	Qty
84C	Spring Governor	1
85C	Spring Throttle Return	1
86C	Control Assy	1
87C	Spring Control	1
88C	Screw Pan 5x25	1
89C	Bolt Governor Arm	1
90C	Nut Flange 6MM	1
91C	Flywheel Comp	1
92C	Fan Cooling	1
$93C_1$	Pulley Starter	1
94C	Nut Special	1
95C	Coil Assy Ignition	1
96C	Bolt Flange	2
$97C_1$	Cover Comp Fan	1
$98C_1$	Plate Side STD	1
$99C_1$	Shroud Comp	1
100C	Fuel Tube A	1
101C	Fuel Tube B	1
102C	Wire Stop Switch	1
103C	Bolt Flange 6x12	6
104C	Bolt Flange 6x16	1
105C	Screw Setting	1
106C	Guide Ratchet	1
107C	Spring Friction	1
108C	Ratchet Starter	2
109C	Spring Ratchet	2
110C	Reel Recoil Starter	1
111C	Spring Recoil	1
$112C_1$	Case Comp Recoil	1
113C	Roe Recoil Starter	1
114C	Knbrecoil Starter	1
115C	Bolt Flange 6x8	1
116C	Lever	3
117C	Air Valve	1

NOTE: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

ASSEMBLY DIAGRAM - CONTINUED



NOTE: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

LIMITED 1 YEAR WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of one year from the date of purchase (90 days if used by a professional contractor or if used as rental equipment). See engine manufacturer's warranty which covers engine. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

3491 Mission Oaks Blvd. • PO Box 6009 • Camarillo, CA 93011 • (800) 444-3353

Emission Control System Warranty

California and United States Emission Control Defects Warranty Statement

The California Air Resources Board (herein CARB), the United States Environmental Protection Agency (herein EPA), and Harbor Freight Tools® (herein HFT) are pleased to explain the emission control system warranty on your 1995 and later Small Off-Road Engine (herein engine). In California, the engine must be designed, built and equipped to meet the State's stringent anti-smog standards. Elsewhere within the United States, new off-road, spark-ignition engines certified for model year 1997 and later, must meet similar standards set forth by the EPA. HFT must warrant the emission control system on your engine for the periods of time described below, provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the carburetor or fuel-injection system, and the ignition system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, HFT will repair your engine at no cost to you including diagnosis, parts and labor.

Manufacturer's Warranty Coverage

The 1995 and later engines are warranted for two (2) years. If any emission-related part on your engine is defective, the part will be repaired or replaced by HFT.

Harbor Freight Tools Emission Control Defects Warranty Coverage

Engines are warranted for a period of two (2) years relative to emission control parts defects, subject to the provisions set forth below. If any emission related part on your engine is defective, the part will be repaired or replaced by HFT.

Owner's Warranty Responsibilities

- As the engine owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. HFT recommends that you retain all receipts covering maintenance on your engine, but HFT cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- As the engine owner, you should, however, be aware that HFT may deny you warranty coverage if your engine or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.
- You are responsible for shipping your engine to a HFT warranty station as soon as a problem exists. Contact the HFT Customer Service department at the number below to make shipping arrangements. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact the Harbor Freight Tools Customer Service Department at 1-800-444-3353.

Emission Control System Warranty - continued

Harbor Freight Tools Emission Control Defects Warranty Provisions

1. Length of Coverage

HFT warrants to a first retail purchaser and each subsequent purchaser that the engine is free from defects in materials and workmanship that cause the failure of warranted parts for a period of two (2) years after the date of delivery to the first retail purchaser.

2. No Charge Repair or Replacement

Repair or replacement of any warranted part will be performed at no charge to the owner if the work is performed through a warranty station authorized by HFT. For emissions warranty service, contact the HFT Customer Service Department at 1-800-444-3353.

3. Consequential Damages Coverage

Coverage under this warranty shall also extend to the failure of any engine components caused by the failure of any warranted part while it is still covered under this warranty.

4. Coverage Exclusions

Warranty claims shall be filed in accordance with the provisions of the HFT warranty policy explained in the box at the top of the previous page. HFT shall not be liable for any loss of use of the engine, for any alternative usage, for any damage to goods, loss of time, or inconvenience. Warranty coverage shall also be excluded for any part which fails, malfunctions, or is damaged due to failure to follow the maintenance and operating instructions set forth in the Owner's Manual including, but not limited to:

(a) use of parts which are not authorized by HFT

(b) improper installation, adjustment or repair of the engine or of any warranted part unless performed by an authorized warranty center

(c) failure to follow recommendations on fuel use contained in the Owner's Manual

(d) improper or inadequate maintenance of any warranted parts

(e) repairs performed outside of the authorized warranty service dealers

(f) alterations by changing, adding to or removing parts from the engine.

5. Service and Maintenance

Component parts which are not scheduled for replacement as required maintenance or are scheduled only for regular inspection to the effect of "repair or replace as necessary" are warranted for the warranty period. Any warranted part which is scheduled for replacement as required maintenance is warranted for the period of time up to the first scheduled replacement point for that part. Any replacement part, provided it is equivalent in durability and performance, may be used in performance of maintenance or repairs. The owner is responsible for commissioning a qualified technician/mechanic to perform all required maintenance, as outlined in the **Inspection, Cleaning, and Maintenance** section on page 17 of this manual.

6. Warranted Parts

1) Fuel Metering System

i) Carburetor and its internal parts.

ii) Fuel pump (if so equipped).

iii) Cold start enrichment system.

2) Air Induction System

i) Intake pipe/manifold.

ii) Air cleaner.

3) Ignition System

i) Spark plug.

ii) Magneto ignition system.

4) Catalyst System (if so equipped)

i) Exhaust pipe stud.

ii) Muffler.

iii) Catalytic converter (if so equipped).

5) Miscellaneous items Used in Above Systems

i) Vacuum, temperature and time sensitive valves and switches.

ii) Hoses, belts, connectors, and assemblies.